

What is Claimed is:

1. A head slider comprising:

a front surface opposing a disk-formed recording medium;

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an air inlet end section;

an air outlet end section;

a disk inner edge side; and

a disk outer edge side; wherein said front surface

includes:

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a positive pressure generating section;

a negative pressure generating recess;

a head for performing at least one of

recording operation and playing back operation on said disk-formed recording medium; and

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a sloped face extended from end on air outlet side of said negative pressure generating recess to at least one of ends at said air outlet end section, said disk inner edge side, and said disk outer edge side and arranged such that distance thereof from said disk-formed recording medium, while said head slider is steadily afloat over said recording medium, becomes gradually larger toward end thereof.

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2. A head slider comprising:

a front surface opposing a disk-formed recording medium;

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an air inlet end section;

an air outlet end section;

a disk inner edge side; and

a disk outer edge side; wherein said front surface includes:

5 a positive pressure generating section;
a negative pressure generating recess;
a head for performing at least one of
recording operation and playing back operation on said disk-
formed recording medium; and

a through hole going from said negative
pressure generating recess to an end face at said disk inner edge
side or at said disk outer edge side.

3. The head slider according to claim 1, wherein said
front surface includes:

10 a first air-bearing face; and
a second air-bearing face, wherein said first air-
bearing face includes:

15 a positive pressure generating section;
a negative pressure generating recess;
and

20 a head disposed on at said air outlet end
section for performing at least one of recording and playing back on
said disk-formed recording medium; and said second air-bearing
face is formed of

25 a sloped face extended from end on air
outlet side of said negative pressure generating recess to at least
one of ends at said air outlet end section, said disk inner edge side,
and said disk outer edge side and arranged such that distance
thereof from said disk-formed recording medium, while said head

slider is steadily afloat over said recording medium, becomes gradually larger toward the end thereof.

4. The head slider according to claim 2, wherein said front surface includes:

5 a first air-bearing face; and
 a second air-bearing face, wherein said first air-bearing face includes:

a positive pressure generating section;

a negative pressure generating recess;

10 and

a head disposed at said air outlet end section for performing at least one of recording and playing back on said disk-formed recording medium; and said second air-bearing face is formed of

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a sloped face extended from end on air outlet side of said negative pressure generating recess to at least one of ends at said air outlet end section, said disk inner edge side, and said disk outer edge side and arranged such that distance thereof from said disk-formed recording medium, while said head

20 slider is steadily afloat over said recording medium, becomes gradually larger toward the end thereof.

SOS a 17 5. The head slider according to any of claim 1 to claim 4, wherein said positive pressure generating section is formed of:

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two side rails disposed at a predetermined distance from each of said disk inner edge side and said disk outer edge side so as to be extended from said air inlet end section to said air outlet end

section; and

a cross rail having main portion thereof disposed at a predetermined distance from said air inlet end section and arranged perpendicularly to the air inflow direction and having both end portions thereof connected with said two side rails; wherein

said negative pressure generating recess is constituted of a portion of lower-leveled face surrounded by said positive pressure generating section and a flotation improving face, which is formed, separately from said positive pressure generating section, in a central portion toward said air outlet end section.

505 a 17 6. The head slider according to any of claim 1, claim 3, and claim 4; wherein

said sloped face is a planar face extended from end on air outlet side of said negative pressure generating recess to the air outlet end section and adapted such that distance from said disk, while said head slider is steadily afloat over said disk, becomes gradually larger toward the end thereof.

505 a 17 7. The head slider according to any of claim 1, claim 3, and claim 4; wherein

said sloped face is a curved face extended from end on air outlet side of said negative pressure generating recess to at least one of ends at said air outlet end section, said disk inner edge side, and said disk outer edge side and adapted such that distance thereof from said disk, while said head slider is steadily afloat over said disk, becomes continuously larger toward end thereof.

8. A disk drive comprising:

a disk serving as a recording medium;
 a driver for rotationally driving said disk;
 a suspension capable of swinging around a
 bearing portion and having a head slider attached to distal end
 5 thereof such that said head slider opposes said disk; and

a retreat position where said disk is held
 retreated when said disk is stopped; wherein said head slider
 comprises:

10 a front surface opposing a disk-formed recording
 medium;

an air inlet end section;

an air outlet end section;

a disk inner edge side; and

15 a disk outer edge side; wherein said front surface
 includes:

a positive pressure generating section;

a negative pressure generating recess;

a head for performing at least one of
 recording operation and playing back operation on said disk-

20 formed recording medium; and

a sloped face extended from end on air
 outlet side of said negative pressure generating recess to at least
 one of ends at said air outlet end section, said disk inner edge side,
 and said disk outer edge side and arranged such that distance
 25 thereof from said disk-formed recording medium, while said head
 slider is steadily afloat over said recording medium, becomes
 gradually larger toward end thereof.

9. A disk drive comprising:

a disk serving as a recording medium;

a driver for rotationally driving said disk;

a suspension capable of swinging around a

5 bearing portion and having a head slider attached to distal end thereof such that said head slider opposes said disk; and

a retreat position where said disk is kept retreated when said disk is stopped; wherein said head slider comprises:

10 (a front surface) ^{of what?} opposing a disk-formed recording medium;

an air inlet end section;

an air outlet end section;

a disk inner edge side; and

15 a disk outer edge side; wherein said front surface includes:

a positive pressure generating section;

a negative pressure generating recess;

a head for performing at least one of

20 recording operation and playing back operation on said disk-formed recording medium; and

(a through hole going from said negative pressure generating recess to an end face at said disk inner edge side or at said disk outer edge side.)

add a 2nd

should claim - to slider structure not disk